SYSTEM, METHOD AND STORAGE MEDIUM FOR PREDICTING IMPACT PERFORMANCE OF PAINTED THERMOPLASTIC

ABSTRACT OF THE DISCLOSURE

[0103] A method for predicting impact performance of an article constructed of a material includes: applying physical properties of the material to a constitutive model; performing biaxial property tests on painted samples of the material shaped according to test geometries; performing finite element simulation analysis on the test geometries using the constitutive model; determining maximum principle stress levels from the finite element simulation analysis corresponding to experimental failure displacements obtained from the biaxial property tests; and applying the maximum principle stress levels and the constitutive model to finite element simulation analysis of the article.